

VOLUTA PERTUSA LINNAEUS, 1758; *VOLUTA MORIO* LINNAEUS, 1767; *VOLUTA RUFFINA* LINNAEUS, 1767; *BULLA CONOIDEA* LINNAEUS, 1767 (MOLLUSCA, GASTROPODA): PROPOSED SUPPRESSION UNDER THE PLENARY POWERS. Z.N.(S.) 1700

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This communication requests the International Commission on Zoological Nomenclature to make use of its plenary powers to suppress for the purposes of the Law of Priority, but not for those of the Law of Homonymy, three specific names in the genus *Voluta* and one specific name in the genus *Bulla* as published by Linnaeus in the *Systema Naturae*, 1758 and 1767.

1. *Voluta pertusa* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 732, No. 367. The original diagnosis is "V. testa fusiformi striata punctis pertusis, labro denticulato". The only infrageneric indication is "Fusiformes". Figure H on pl. 54 in Gualtieri (1742, *Index Testarum Conchyliorum quae adservantur in Museo Nicolai Gualtieri*) is cited as an indication. No locality is given.

In the 12th edition of the "*Systema*", the indications "emarginata" and "columella quintuplicata" have been added. This additional indication combined with the original diagnosis are sufficient to identify the shell as a member of the genus *Mitra* Röding, 1798, but inadequate for an unequivocal specific identification. The cited delineation from Gualtieri (1742) also defies identification, and the figure cannot be associated with any known *Mitra* species with even a reasonable amount of certainty.

Linnaeus described *Voluta pertusa* from the Museum Ludovicae Ulricae collection (1764, *Museum s:ae r:ae m:tis Ludovicae Ulricae Reginae Svecorum* : 596, No. 237), and in doing so, cited the full description which appeared later in the 12th edition of the "*Systema*". The subdescription is "Habitus V. Mitrae, cujus forte sola varietas. Differt 1. quod brevior, crassior. 2. Fasciis longitudinalibus testaceo-fuscescentibus. 3. Striis exarata transversis ex punctis excavatis, sic etiam Mitra saepius striata est".

The Museum Ulricae description seems only to add to the confusion, and appears to describe a different species to that from the 10th edition of the "*Systema*".

Dodge (1955, *Bull. Amer. Mus. Nat. Hist.* 107 : 117), treated *Voluta pertusa* Linnaeus, in great detail, and commented that "The details of the description might be used to describe two distinct species, *Mitra cardinalis* (Gmelin, 1791) and *M. digitalis* (Dillwyn, 1817) [= *M. imperialis* Röding, 1798], and both identifications have been proposed from time to time".

Mitra imperialis Röding is a species with distinct coronations at the sutures, however the important diagnostic phrase "suturis crenulatis" is lacking in all Linnaean descriptions of *Voluta pertusa*. These sutural crenulations are not discernible in the two views of the cited Gualtieri figure (1742). It is further doubtful that *V. pertusa* represents the same species as *V. cardinalis* Gmelin, since Linnaeus would not have failed to cite Figure G2 on pl. 53 from Gualtieri (1742); these two views of the shell are an extremely good representation of the

species *V. cardinalis* Gmelin, and the figure has been cited by Gmelin for his species.

Gmelin (1791, *Systema Naturae Linnaei* (ed. 13) 1 (6) : 3458) was equally confused about the true identity of *Voluta pertusa*, as he included no less than four different species under this name, i.e. *V. cardinalis* Gmelin, *Mitra imperialis* Röding, *M. eremitarum* Röding and *M. contracta* Swainson. Such confused usage of *Voluta pertusa* has persisted in literature almost to the present day.

"A specimen of *Mitra digitalis* (= *M. imperialis* Röding) is found in the Linnaean collection in London, as well as an example of *M. cardinalis*, and these are the only two specimens that answer to the description of *M. pertusa*. As the name *pertusa* appears on the list of Linnaeus' own shells, this is strong although not conclusive evidence that one of the two is the type" (Dodge, 1955, 107 : 119).

The reasons for considering *Voluta pertusa* Linnaeus as a doubtful species are summarized as follows:

- (1) The original diagnosis is fully inadequate for an unequivocal identification.
- (2) The additional indication from the 12th edition of the "*Systema*" does not shed any further light on the specific identity of the taxon, and the description from the Museum Ulricae strongly suggests that two different species have been combined under one description.
- (3) The only figure cited from Gualtieri (1742), represents an unidentifiable *Mitra* species.
- (4) The selection of a lectotype from the two different *Mitra* species present in the Linnaean collection at the Linnaean Society of London, is in view of the original description and figure citation an impossibility. Both these species, i.e. *Mitra cardinalis* (Gmelin) and *M. imperialis* Röding, respond to Linnaeus' original diagnosis and subdescription in part only, and a choice of either as lectotype would be purely arbitrary.

For these reasons it is advisable that the name *Voluta pertusa* Linnaeus, be suppressed as a *nomen dubium*.

2. *Voluta morio* Linnaeus, 1767, *Syst. Nat.* (ed. 12) 1 : 1193, No. 421. The original diagnosis is "V. testa submarginata fusiformi tereti laevi, columella triplicata". The subdescription is "Simillima V. caffrae, ut nota una nequeat non et altera dignosci: haec colore eodem fusco, ventre subtus cincto unica linea alba, qua etiam destituuntur spirae anfractus. Corpus testae duplo crassius, nec spira striatum. Columella absque omni labio interiore et dentibus s. plicis tantum 3, iisque parvis". Figures 21 and 22 on pl. 49 in Seba (1758, *Locupletissimi rerum naturalium thesauri accurata descriptio*) are cited as an indication. No locality is given.

The original diagnosis is inadequate for identification. In the subdescription the species is stated to be similar to *Voluta caffra* Linnaeus, 1758, however, the phrase "Corpus testae duplo crassius, nec spira striatum" disassociate the species from *V. caffra*.

The Seba figures cited (1758), represent the species *Voluta caffra* Linnaeus, a species which is placed in the genus *Vexillum* under Mitridae by most modern

taxonomists. The same Seba figures have been cited one page earlier (1767, 1 : 1192) as an indication for *Voluta caffra* by Linnaeus.

Voluta morio is an almost forgotten species, mainly because it remained unidentifiable, and consequently has been little used in synonymy. Deshayes & Milne-Edwards (1845, *Histoire Naturelle des Animaux sans Vertebres* (ed. 2) 10 : 318–320) presumed the species to be a variant of *Mitra caffra* (Linnaeus). Hanley (1855, *Ipsa Linnaei Conchyliia* : 229) thought the species to be possibly *Turbinella leucozonalis* Lamarck. However, one year later (1856, Hanley's edition of Wood's *Index Testaceologicus an illustrated catalogue of British and Foreign shells* : 104) Hanley suggested that the species is probably *Mitra caffra* (Linnaeus). Dodge (1955, 107 : 114) who discussed the subject at length, suggested that the shell before Linnaeus was not even a *Mitra* and that the name should be dropped as undefined.

There is no specimen conforming to the description of *Voluta morio* in the Linnean collection, and the species is not on the list of species owned by Linnaeus (Dodge, 1955). The species could have possibly been a beach-worn specimen of *Mitra caffra* (Linnaeus), or a dark-colored variant of *Mitra vulpecula* (Linnaeus). Linnaeus' comparison of the species to his *Voluta caffra*, and citation of identical figures as for *V. caffra*, certainly suggest the species to be a species of the genus *Mitra*.

The specific name *Voluta morio* is too doubtful to be retained, and should be suppressed as a *nomen dubium* for the following reasons:

- (1) The original diagnosis and subdescription are inadequate for an unequivocal identification. Although the species has been compared by Linnaeus to *Mitra caffra*, certain phrases of the subdescription are incompatible with diagnostic characters of this species.
- (2) The cited figures from Seba (1758) have been previously used by Linnaeus as an indication for *Voluta caffra*, and indeed represent that species.
- (3) No specimen is available for selection as a lectotype.
- (4) The species has always remained unidentified, and consequently has been little used in literature.

3. *Voluta ruffina* Linnaeus, 1767, *Syst. Nat.* (ed. 12) 1 : 1192, No. 418. The original diagnosis is "V. testa integriuscula fusiformi transversim rugosa, columella quadriplicata, labro crenulato". The subdescription is "Similis V. scabriusculae, sed angustior, longior, passim incarnato-maculata. Cauda integra absque umbilico. Labrum recurvum, crenulatum tuberculis rotundatis". Figure G on pl. 54 in Gualtieri (1742, *Index Testarum Conchyliorum quae adservantur in Museo Nicolai Gualtieri*) is cited as an indication. The locality is given as "In India Orientali".

The original diagnosis is inadequate for identification. In the subdescription the species is said to be similar to *Voluta scabriuscula* (originally established as *Buccinum scabriculum* Linnaeus, 1758), however, the Gualtieri figure cited (1742) bears little resemblance to this species. Furthermore, the phrase "transversim rugosa" is incompatible with the cited figure, which depicts a shell which is finely transversely puncto-striate, and not spirally ridged. The outer lip is depicted as thickened and smooth, which is in direct contrast to the

phrase from the subdescription "Labrum recurvum, crenulatum tuberculis rotundatis".

Gmelin (1791, *Systema Naturae Linnaei* 1 (6) : 3450) listed *Voluta ruffina*, however, referred to the Gualtieri (1742) indication with a query. Dillwyn (1817, *A descriptive catalogue of recent shells arranged according to the Linnaean system*, 1 : 545) associated *V. ruffina* Linnaeus with *Mitra adusta* Lamarck, 1811 (= *M. eremitarum* Röding, 1798). Deshayes & Milne-Edwards (1845, 10 : 304) suggested that *Voluta ruffina* could be either the *Mitra versicolor* Lamarck, 1811 (= *Voluta nubila* Gmelin, 1791), or even *Voluta clathrus* Gmelin, 1791. The authors, however, pointed out that "the identity of the species cannot be established because the description of Linnaeus is too short and is not accompanied by a sufficient synonymy".

Hanley (1855 : 227) identified *Voluta ruffina* as the species *Mitra ferruginea* Lamarck, 1811, although he admitted that no specimen labelled *Voluta ruffina* was in the Linnean collection at the time it was examined by him. The species was figured by Hanley (pl. 4, fig. 5), however these figures do not appear to be conspecific with *Mitra ferruginea* Lamarck, as defined by the delineation in Chemnitz (1780, *Conchylieni-Cabinet*, 4 : 224, pl. 149, figs. 1380, 1381). One year later (1856 : 104, pl. 20, fig. 103) Hanley commented on Wood's figure of *Voluta ruffina*, suggesting that it is the same species as *Mitra eremitarum* Röding, 1798.

Dodge (1955 : 107-109) treated *Voluta ruffina* rather thoroughly, and suggested that the Gualtieri figure (1742) could possibly represent *Voluta aurantia* Gmelin, 1791, but remarked further that "the resemblance between the figures and the Linnaean description is too uncertain to be seriously entertained". The writer stated, that two specimens of *Mitra ferruginea* Lamarck, are in the Linnean collection and are accompanied by a label reading "*Voluta ruffina*". As the Linnean collection did not contain specimens of *V. ruffina* at the time Hanley examined it, Dodge concluded that the labels were attached to the species by a later investigator on the basis of Hanley's conclusions. Dodge found *Voluta ruffina* inadequately defined, a conclusion with which I agree.

It is recommended that *Voluta ruffina* Linnaeus be suppressed as a *nomen dubium* for the following reasons:

- (1) The original diagnosis and subdescription are inadequate for an identification and contain diagnostic characters incompatible with the cited Gualtieri figure (1742).
- (2) The only indication cited, i.e. Figure G on pl. 54 in Gualtieri (1742), is dissimilar to the species *Mitra scabricula* (Linnaeus) with which it was compared by Linnaeus, and cannot be identified with any particular species. The sculpture of the shell and features of the outer lip as depicted in the cited figure, are contradictory to diagnostic characters contained in the original diagnosis and subdescription.
- (3) There is no specimen marked "*Voluta ruffina*" in the Linnean collection at the Linnaean Society in London (Dodge, 1955, 107 : 109). The two specimens of the species *Mitra ferruginea* Lamarck present in the Linnean collection, cannot be regarded as authentic types, as the accompanying label "*Voluta ruffina*" must have been added by

unknown hand after Hanley examined the collection (1855).

4. *Bulla conoidea* Linnaeus, 1767, *Syst. Nat.* (ed. 12) 1 : 1185, No. 385. The original diagnosis is "B. testa oblongo-turbinata laevi, basi substriata, suturis crenulatis". The subdescription is "Testa magnitudine glandis, albido-flavescens, structura conici, vix striata, nisi versus basin striis aliquot punctatis. Spira conica, testa dimidio brevior. Anfractus tenues, imbricati ad marginem punctis quasi crenulati. Basis emarginata. Columella plicis 5 s. 6. Labium obtusum." No indication to a published figure is cited. No locality is given.

The specific name *Bulla conoidea* Linnaeus, did not appear in literature for 100 years. It was mentioned by Röding (1798, *Museum Boltinianum sive Catalogus cimeliorum; pars secunda continens Conchylia* : 53) as *Pterygia conoidea* (= *Voluta conus* Gmelin, 1791). Hanley (1855 : 207–208) was unable to identify Linnaeus' species, but suggested that it may be a *Mitra* in the section *Conohelix* (sic).

Dodge (1955, 107 : 36–38) advocated the re-introduction of *Bulla conoidea* Linnaeus, and pointed out that the Linnaean species may represent either *Mitra conulus* Lamarck, 1811 (= *M. conus* Gmelin, 1791) or *Imbricaria conica* Schumacher, 1817 (= *I. conularis* Lamarck, 1811); the writer, however, favored *Mitra conus* (Gmelin) as the species identical with *Bulla conoidea* Linnaeus.

Although Linnaeus' original diagnosis and subdescription contain diagnostic characters compatible with the species *Voluta conus* Gmelin, they are equally well applicable to *Voluta dactylus* Linnaeus, 1767, and to the smooth form or beach-worn specimens of *Voluta crenulata* Gmelin, 1791. *V. dactylus* also possesses brown spiral striae, a conical form with a crenulate or granulose spire and six columellar folds.

Since Linnaeus' diagnosis and subdescription are unsupported by an indication to published figures, and the species has been placed in the section *Bulla* instead of *Voluta* where all other Linnaean species of *Mitra* were placed, they are on their own insufficient to identify the species unequivocally.

Furthermore, the species had not been mentioned from the Museum Ludovicae Ulricae collection (1764), and there is no specimen answering to Linnaeus' description in the Linnaean collection at the Linnaean Society in London; the species has not been included on the list of specimens owned by Linnaeus (Dodge, 1955, 107 : 36).

In view of the reasons cited, the name *Bulla conoidea* Linnaeus, should be suppressed as a *nomen dubium*.

I herewith submit to the International Commission proposals that it should:

- (1) make use of its plenary powers to suppress for the purposes of the Law of Priority, but not those of the Law of Homonymy the following specific names, all four of which are *nomina dubia*:

- (a) *pertusa* Linnaeus, 1758, as published in the combination *Voluta pertusa*;
- (b) *morio* Linnaeus, 1767, as published in the combination *Voluta morio*;
- (c) *ruffina* Linnaeus, 1767, as published in the combination *Voluta ruffina*;

- (d) *conoidea* Linnaeus, 1767, as published in the combination *Bulla conoidea*;
- (2) place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
- (a) *pertusa* Linnaeus (1758, *Syst. Nat.* (ed. 10) : 732) as published in the combination *Voluta pertusa* (a name suppressed under the plenary powers in (1) (a) above);
 - (b) *morio* Linnaeus (1767, *Syst. Nat.* (ed. 12) : 1193) as published in the combination *Voluta morio* (a name suppressed under the plenary powers in (1) (b) above);
 - (c) *ruffina* Linnaeus (1767, *Syst. Nat.* (ed. 12) : 1192) as published in the combination *Voluta ruffina* (a name suppressed under the plenary powers in (1) (c) above);
 - (d) *conoidea* Linnaeus (1767, *Syst. Nat.* (ed. 12) : 1185) as published in the combination *Bulla conoidea* (a name suppressed under the plenary powers in (1) (d) above).